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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/645,637	08/22/2003	Teruo Oda	01-477	8015

23400 7590 04/06/2007  
POSZ LAW GROUP, PLC  
12040 SOUTH LAKES DRIVE  
SUITE 101  
RESTON, VA 20191

EXAMINER
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NGO, HUNG V

ART UNIT	PAPER NUMBER
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2831

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/06/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/645,637

Applicant(s)

ODA, TERUO

Examiner

Hung V. Ngo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 23 January 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) 20-33 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>08/2003 &amp; 11/2006 &amp; 2/2007</u> . | 6) <input type="checkbox"/> Other: _____  |

**DETAILED ACTION**

***Election/Restrictions***

Applicant's election without traverse of Group I, claims 1-19 in the reply filed on 01-23-2007 is acknowledged.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-19 are rejected under 35 U.S.C. 102(b) as being anticipated by Shirai (JP10-332495).

Re claim 1, Shirai discloses a sensor comprising: a metallic housing (8) having a hollow portion (Fig 5);  
a metallic terminal pin (12, 14, 15), a part of which is inserted into the hollow portion of the housing;  
a sensing element (2) connected to the terminal pin; and a resin casing (6);  
wherein the terminal pin and the resin casing provide a connector for connecting an outer circuit outside the sensor (Fig 5),  
wherein a part of the resin casing is disposed in the hollow portion, and

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wherein the terminal pin and the housing are molded with the resin casing by insert molding so that the resin casing, the terminal pin, and the housing are integrated together (Fig 5).

Re claim 2, wherein the hollow portion of the housing includes an inner wall having an uneven portion for increasing bonding strength between the resin casing and the housing (Fig 5).

Re claim 3, wherein the uneven portion has a screw shape (Fig 5).

Re claim 4, wherein the hollow portion of the housing has a cylindrical shape with a center axis (Fig 5), and wherein the screw shape of the uneven portion is asymmetric in relation to the center axis of the hollow portion (Fig 1).

Re claim 5, wherein the uneven portion has a wrinkle shape (Fig 5).

Re claim 6, wherein the hollow portion of the housing has a cylindrical shape with a center axis, and wherein the wrinkle shape of the uneven portion is asymmetric in relation to the center axis of the hollow portion (Fig 1).

Re claim 7, wherein the uneven portion is a groove (16) disposed on an inner wall of the hollow portion.

Re claim 8, wherein the hollow portion of the housing has a cylindrical shape with a center axis, and wherein the groove (92) is asymmetric in relation to the center axis of the hollow portion (Fig 1).

Re claim 9, wherein the uneven portion is a through hole penetrating the inner wall of the hollow portion (Fig 5).

Re claim 10, wherein the groove has a resin introduction port for

introducing resin material in a case where the terminal pin and the housing are molded with the resin casing by insert molding (Fig 5).

Re claim 11, wherein the terminal pin has a hook portion for hooking the terminal pin to the resin casing so that the terminal pin is prevented from being removed from the resin casing in an axial direction of the terminal pin, the hook portion being molded with the resin casing (Fig 6).

Re claim 12, wherein the hook portion of the terminal pin is a hole penetrating the terminal pin (Fig 6).

Re claim 13, wherein the hook portion of the terminal pin is provided by the terminal pin having a non-linear shape, which deviates from a center axis of the terminal pin (Fig 6).

Re claim 14. The sensor according to claim ii, wherein the hook portion of the terminal pin is provided by the terminal pin having a taper shape, which expands toward one end of the terminal pin (Fig 6).

Re claim 15, wherein the hook portion of the terminal pin is provided by the terminal pin having a rough surface (Fig 6).

Re claim 16. A sensor comprising: a metallic housing (8) having a hollow portion; a metallic terminal pin (12, 14, 15) for connecting an outer circuit outside the sensor; a sensing element (2) connected to the terminal pin, for sensing physical quantity; and a resin casing (6), wherein the terminal pin is accommodated in the resin casing except for a portion (14, 15), which connects to the outer circuit, and

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wherein the resin casing is inserted in the hollow portion of the housing so that the housing and the resin casing are integrated each other (Fig 5).

Re claim 17, wherein the terminal pin and the housing are molded with the resin casing by insert molding.

Re claim 18, wherein the hollow portion of the housing includes an inner wall having an uneven portion for increasing bonding strength between the resin casing and the housing (Fig 5), and

wherein the terminal pin (34, 36, 38) includes a hook portion for hooking the terminal pin to the resin casing so that the terminal pin is prevented from being removed from the resin casing, the hook portion being molded with the resin casing (Fig 6).

Re claim 19, wherein the hollow portion of the housing has a cylindrical shape with a center axis, and wherein the uneven portion of the hollow portion is asymmetric in relation to the center axis of the hollow portion (Fig 1).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hung V. Ngo whose telephone number is (571) 272-1979. The examiner can normally be reached on Monday to Thursday 8:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dean A. Reichard can be reached on (571) 272-2800 EXT 31. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

HVN

03-31-07

Hung V. Ngo

**HUNG V. NGO  
PRIMARY EXAMINER**